

Jomon, Yayoi, and Ainu in Japan : Symbiotic Relations between Paddy-Field Rice Cultivators and Hunter-Gatherer-Fishers in Japanese Prehistory : Archaeological Considerations of the Transition from the Jomon Age to the Yayoi Age

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Symbiotic Relations between Paddy-Field Rice Cultivators and Hunter-Gatherer-Fishers in Japanese Prehistory: Archaeological Considerations of the Transition from the Jomon Age to the Yayoi Age

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INTRODUCTION

Recent accelerator mass spectrometry (AMS) dates suggest that the transition from a hunting and gathering way of life to paddy-field rice cultivation in Japan occurred about 3,000 years ago, coinciding with the transition from the Jomon age to the Yayoi period. It is important to consider the reasons why and how this transition occurred, and how it promoted the development of symbiotic relations between hunter-gatherers and farmer. This paper examines both questions using archaeological data.

Rice is not indigenous to the Japanese archipelago, but was introduced via the Korean peninsula at the end of the Jomon age. It is now evident that Jomon people in the Kyushu, Chugoku, and Kinki regions accepted rice paddy field cultivation relatively readily, and that even allowing for a time lag in its spread to eastern Japan (Figure 1), there too Jomon people accepted rice cultivation as one of their subsistence activities.

For most Japanese archaeologists, the transition from a hunting and gathering society to the farming societies of the Yayoi age based on rice cultivation is critically important, because the latter established the economic foundations on which all subsequent Japanese societies were built. Japanese archaeologists have therefore greatly emphasised the division between the Jomon and the Yayoi periods. While some insist on viewing this transition in terms of the adoption of rice monoculture, to the neglect of other subsistence activities, recent investigations indicate that not only rice but also other crops, such as soy beans and millet, were cultivated in Yayoi times over almost all of the main islands of Japan. The facts suggest that slash-and-burn farming could have been carried out in mountainous areas since the beginning of the Yayoi age at the latest.

Here I discuss regional variations in attitudes toward rice cultivation, and consider the reason for the adoption of rice cultivation and its process in terms of social circumstances rather than economic frameworks.



Figure 1 Distribution of paddy field sites in Japan (from Latest Jomon to Yayoi).

RICE CULTIVATION AND OTHER SUBSISTENCE

As well as the experience of cultivating domesticated plants, some hunting, gathering and fishing activities were also carried over from the Jomon period into Yayoi times. For Yayoi people to have depended purely on rice monoculture would have been very risky, because rice is vulnerable to variation in temperature and hours of sunlight. Other subsistence activities, including hunting, gathering and fishing, could therefore complement any possible shortage in rice cultivation. A more complex subsistence strategy can be expected to have given an advantage to Yayoi farmers and the precise subsistence combinations pursued can be explored by analysing archaeological data from Yayoi sites. The choice of these combinations is likely to have varied with local ecology, with various possibilities tested as rice cultivation spread through Japan from west to east, initially at least among Jomon hunter-gatherers. We can also expect there to have been differences between

different hunter-gatherer-fisher and farmer communities in the ways in which this new subsistence activity was integrated with earlier patterns, including the ways in which labour was structured. Analysis of the combination and organisation of subsistence activities therefore demands: identification of the combination of subsistence activities at settlements of Yayoi age and the ways in which they were organised and managed in the landscape; and knowing how and why paddy-field rice cultivation was accepted by each Jomon society from Kyushu across to eastern Japan, especially in the Kanto and Tohoku districts, where many other subsistence activities provided a wealth of foods available all year around that could themselves support a considerable degree of sedentism and social complexity.

As this last point makes clear, regional variability in the timing of subsistence change, the direction of that change, and its effects on social organisation and the relations between communities committed to a degree of rice cultivation and those still pursuing a more fully hunter-gatherer-fisher way of life are all to be expected. Regional variation in decision-making on how to accept rice cultivation would have occurred in western and eastern Japan in accordance with the social organisation of those areas.

SUBSISTENCE COMBINATIONS AND ECOLOGICAL SETTINGS

In the Kanto district of Japan at least three key spatial divisions based on ecological settings can be identified:

- 1) the coast and adjacent area not far from the sea, where the coastal plain, alluvial flood plains, and river terraces have developed;
- 2) the interior far from the sea, with tablelands that face the river terraces and flood plains; and
- 3) the high mountains still further inland, with high altitude away from the foothills.

Various combinations of subsistence activities would have been likely, depending on these ecological settings. For example, a combination of rice cultivation with hunting and gathering was probable in both the coastal and the interior areas, but the specific character of the hunting activities undertaken was probably quite different in each case, with coastal farmers awaiting the arrival of animals attracted to paddy fields, but inland farmers dispatching task-specific hunting parties into the mountains in search of game. The precise nature of both rice cultivation and fishing is also likely to have differed. Thus, at the coast fishing is likely to have been very actively pursued, with fishermen seeking to catch large migratory fish such as tuna and bonito as well as shark. Many fishing implements have been found in sites of Yayoi age in this area, whereas freshwater fishing activities in the interior area have left almost no material traces as the implements required were quite different from those used in sea fishing. To explain by analogy with modern Japanese rural practice, freshwater fishing is typically passive in nature as people wait for fish to come into the paddy fields.

In addition to those already mentioned, other subsistence activities that may be

detectable in the Yayoi archaeological record include millet cultivation by slash-and-burn farming on mountain slopes, and hunting and gathering near human settlements, in the interior highlands and still further inland in the mountains. I now look at examples of how these various activities may have been combined.

RICE CULTIVATION IN KYUSHU AND WESTERN JAPAN

Stone reaping hooks and wooden ploughs and hoes used in rice cultivation, as well as stone arrowheads and wooden bows related to hunting activities, have been found at the Nabatake site (Board of Education of Karatsu city 1982) in Saga Prefecture, Kyushu (Figure 2). This site is located 1 km from the seashore. Layers 9–12 yielded evidence of rice paddy field cultivation and farming implements from the Yayoi period, accompanied by Latest Jomon pottery of Yamanotera type. Bones of wild boar indicate that hunting was also pursued, while hooks and other fishing implements suggest marine fishing activities.

This combination of rice cultivation, hunting, and fishing indicates that the first farmers in Japan were not oriented to rice monoculture alone, and that the exploitation of a variety of wild resources complemented those that were cultivated.

Paddy fields with drainage system inlets and outlets have been discovered at the sites of Nodame, Shichidamae, and Itazuke, all in Fukuoka Prefecture. Evidence of garden farming of fields with ridges was also found, while the remains of soy beans and millet have been recovered from an excavation at Mitsusawa-Futsugaura, again in Fukuoka Prefecture (Kataoka 2007).

Evidence of fishing is also widespread. At Tsujibatake in Fukuoka Prefecture fish traps made of twigs that are of Yayoi age were found, indicating that early farmers exploited fish entering paddy fields or small irrigation canals (Figure 3). In the Kansai district, too, fishing implements have been found at settlements of Yayoi age, including fishing traps made of twigs found in a stream near the Early Yayoi Yamaga site, Osaka (Figure 3). The recovery of many wooden spears at the same site suggests that people also stabbed fish entering into man-made aquatic environments near the settlement. Elsewhere, a small shell midden found at Ohnakanoko, Shiga Prefecture, also indicates that farmers engaged in small-scale fishing activities and shellfish collection, while many octopus pots of Yayoi age discovered in a shallow pit at the seafront at Tamatsu-tanaka in Hyogo Prefecture confirm the exploitation of marine cephalopods.

Ethnoarchaeological observations of freshwater fish today tell us that in spring fish enter the irrigation channels of paddy fields to spawn as soon as they detect the first running water from the paddy field (Negi *et al.* 1991). Japanese ethnographers reported some decades ago that rural villagers living in the Okayama plain caught catfish and other fish running up the canal to paddy fields at night, a practice referred to in Japanese as *namazugiri* (“catfish hooking”) (Yuasa 1977). People also enjoyed hooking fish in ponds used for irrigation in autumn, and eating the fish on ritual occasions.

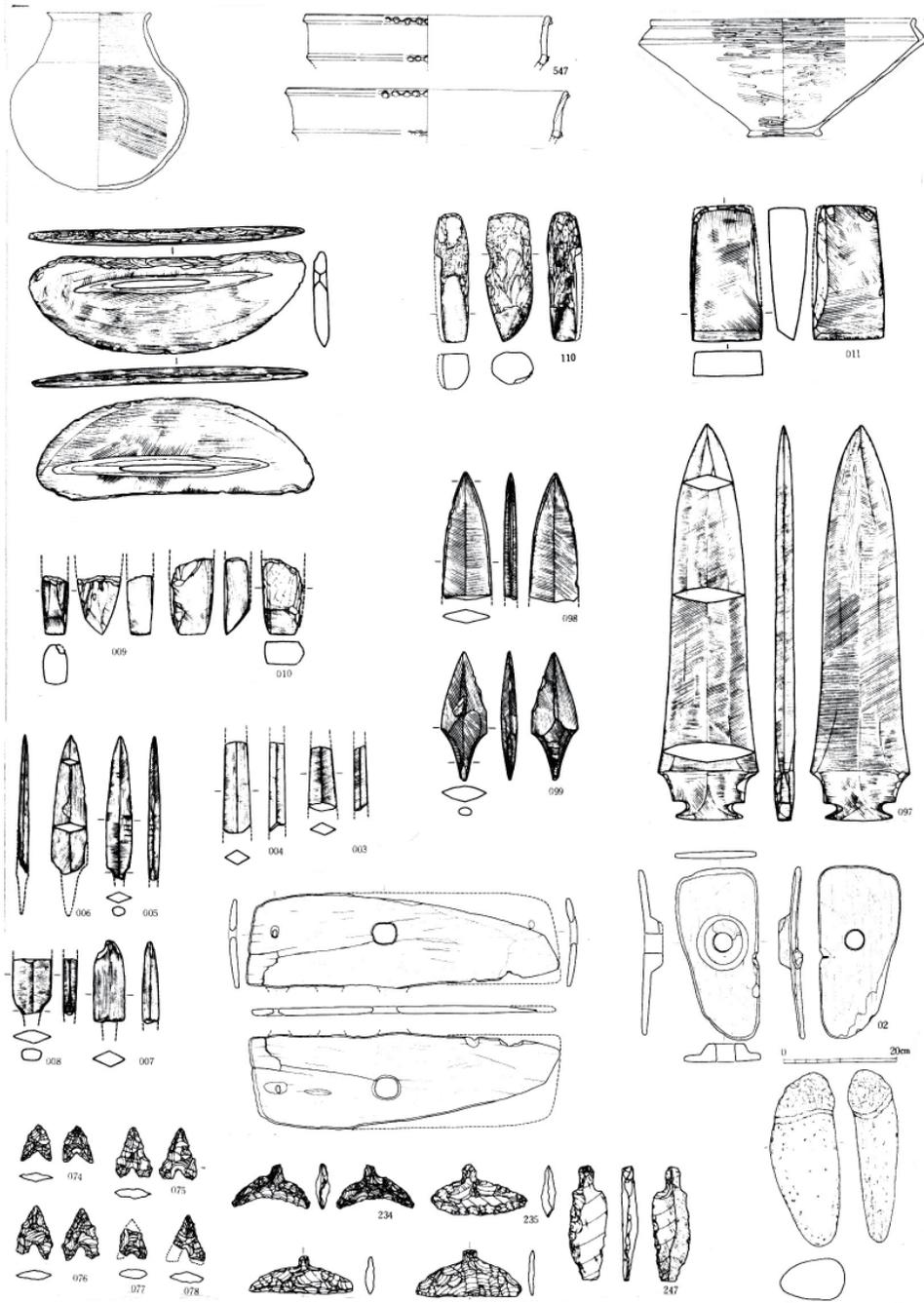


Figure 2 Incipient farming implements and other materials found at Nabatake site (modified from Board of Education of Karatsu City 1982).

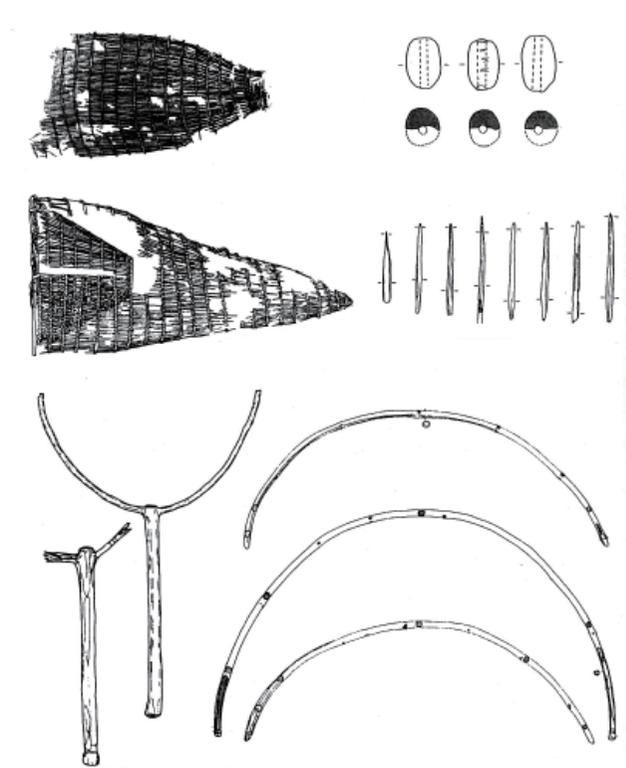


Figure 3 Fishing implements in lakes and marshes found at Yayoi sites in the Kyushu and Kinki district (modified from Higashiosaka City Cultural Association 1987; Archaeological Research Group of the Second Hanwa National Highway 1970; Osaka Cultural Heritage Center 1984; Board of Education of Fukuoka 1979).

RICE CULTIVATION AND OTHER SUBSISTENCE COMBINATIONS IN THE TOKAI AND CHUBU DISTRICTS

As previously indicated, three kinds of settlement pattern can be distinguished according to their ecological settings.

1) Coast

Asahi is a well-known Yayoi-period site because of the large size of its settlement area and the fact that it was surrounded by circular ditches. Paddy-field rice cultivation is inferred to have taken place near the site because of the discovery of many wooden ploughs and hoes (Figure 4), as well as the presence of carbonised rice grains in the excavated deposits (Board of Education of Aichi Prefecture 1982). Well-preserved barbed harpoons and spears made of deer antler (Figure 4) and a rich assemblage of fish bones indicate that marine fishing was also important. Whether

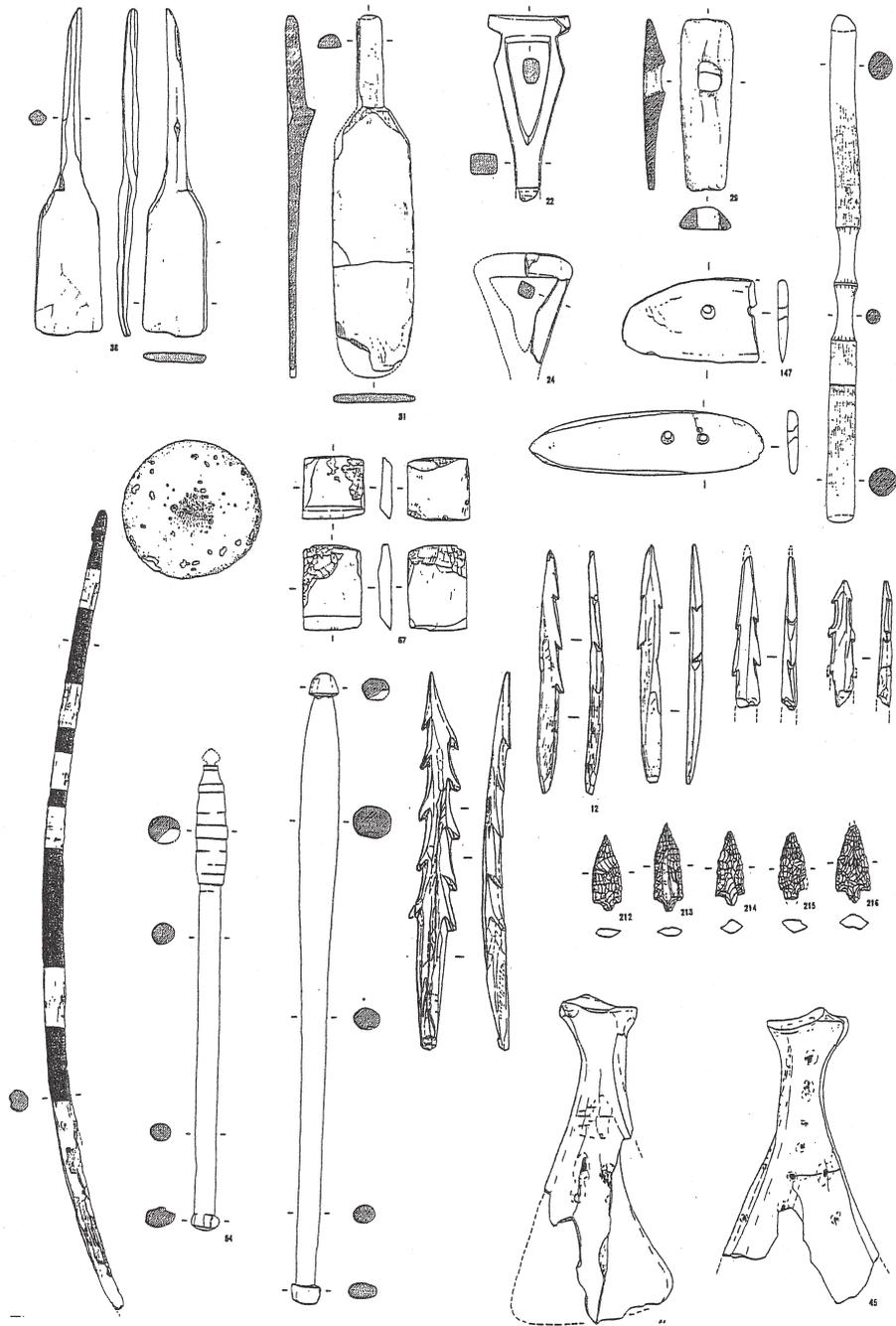


Figure 4 Archaeological materials found at Asahi site (modified from Board of Education of Aichi Prefecture 1982).

the antlers used to make these implements or the deer shoulder blades employed for divination (Figure 4) were brought into the site as raw materials from outside by exchange, or were hunted by the inhabitants of Asahi themselves in the rice paddy fields near the village, is unknown.

The ditches surrounding the Asahi settlement site are thought to have been built for drainage purposes and connected to the main river. However, the presence in some places of weirs made from wood and plant stalks (Figure 5) also suggests that they may have been constructed to facilitate access to fresh-water fish that would have entered the ditches from the main river (Takahashi 1996; Tanaka 1988).

Looking at other sites, we find other additional evidence for early farmers

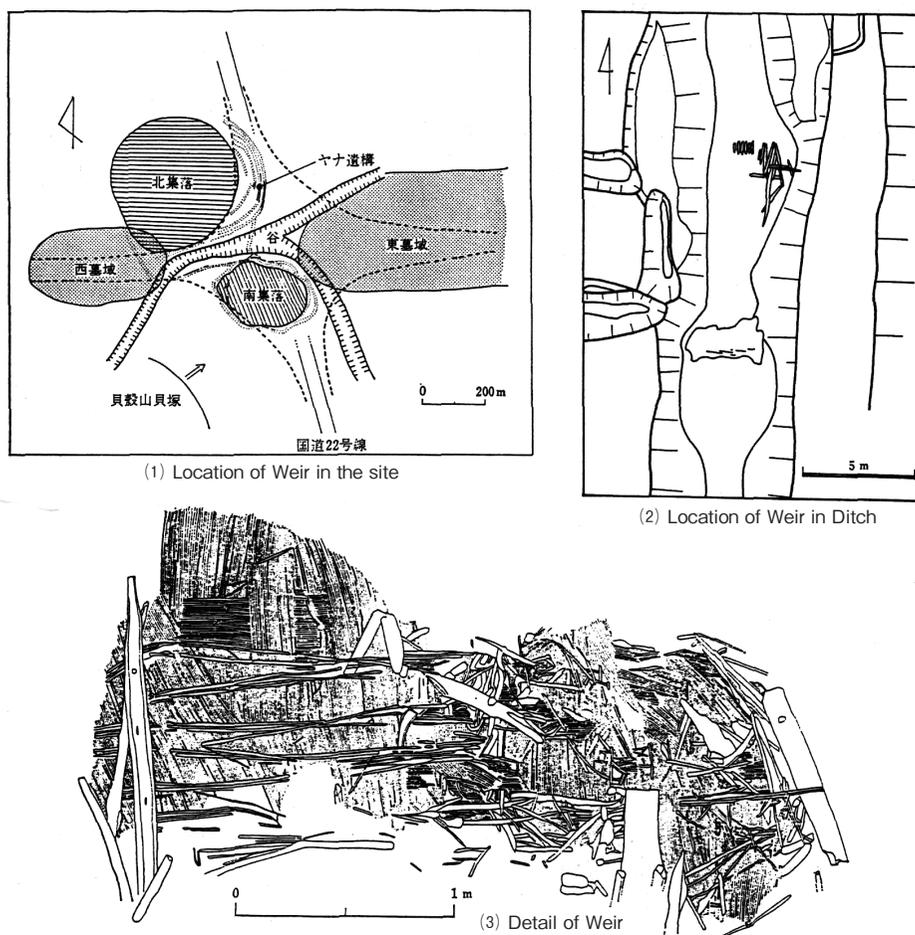


Figure 5 Weir constructed in the trench surrounding the Asahi site (modified from Tanaka 1988).

having pursued a variety of fish species. At Kajiko, Shizuoka Prefecture, for example, another weir and fish trap were found in a big ditch thought to date to the Kofun period, while at Iba a fixed shore net appears to have been constructed at the edge of a lake during the Heian period (Figure 6). Wooden parts of a so-called *yotsudeami* net found at the same site are slightly later in date and similar to those reported in use in modern Japanese fisheries (Figure 7).

Such activities, like the small shell mounds of Yayoi age found in the Tokai district (Ohno 1981), may have been supplemental to farming, but at Shirahama, which is situated on the beach in Toba City, Mie Prefecture, there is good evidence for Yayoi people having undertaken more specialised fishing and hunting (Motoura Sites Archaeological Research Group 1995). Faunal remains there include varieties of shark (Carcharhinidae, Sparidae), as well as other fish and mammals such as wild boar and deer. No agricultural implements were found at Shirahama, while artefacts show a preponderance of fishery and hunting implements such as barbed harpoons, toggle line harpoons, and fish hooks, all made of deer antler (Figure 8). The small quantity of carbonised rice grains found may be explicable in terms of exchange with some other community and, on balance, Shirahama seems best understood as a specialised marine fishing site. Barbed harpoons discovered at the Asahi site might indicate that some specialised fishermen lived together with farmers in a single village, as such fishing implements have been found at the Shirahama site that included specialised fishermen.

2) Interior

The second type of settlement pattern is associated with interior sites that are scattered in the foothills of the mountains or along the banks of the upper reaches of streams. The Namani site in Nagano Prefecture is a good example of a mountain village of Yayoi age, and is situated in the mountain foothills at about 350 m above sea level. To judge from its associated pottery types it is likely to be of late Yayoi date. The Yayoi people who lived there processed deer antlers to make hooks and other tools, and used deer shoulder blades for divination. These bones are thought to have been brought to the site by specialised hunting parties making use of temporary hunting camps such as that excavated at the Yukura cave, which is located a few kilometres away. Deer antlers and shoulder blades may also have been exchanged with lowland village people who practised paddy-field rice cultivation near the coast, who employed the antlers to make fish hooks and harpoons.

3) High mountains

Many temporary hunting camps, including the Yukura cave, are known from the higher mountains, around 1,500 m above sea level (Board of Education of Takayama Village 2001). Excavations at Yukura itself show that this site was utilised from Earliest Jomon times to the modern period. Many stone artefacts, including arrowheads and scrapers, were discovered in it, among them some 350 arrows of Yayoi date (Board of Education of Takayama Village 2001). The faunal assemblage

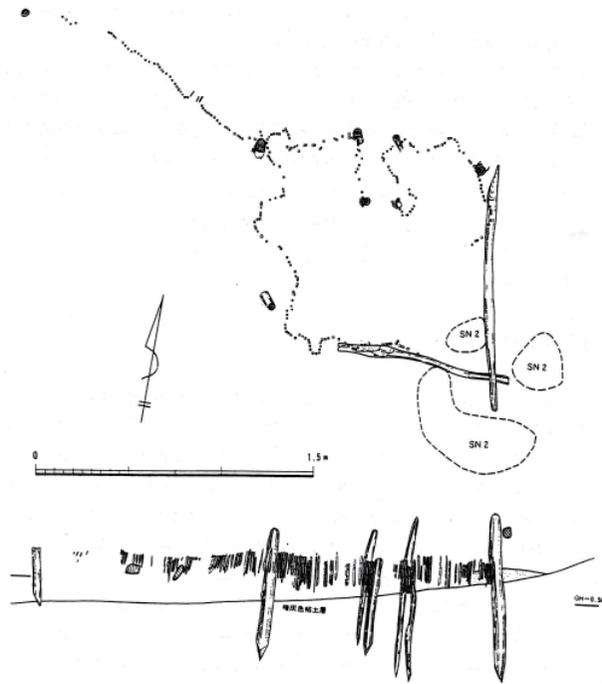


Figure 6 Weir of the Heian period, constructed in a marsh (Yagi 1973).

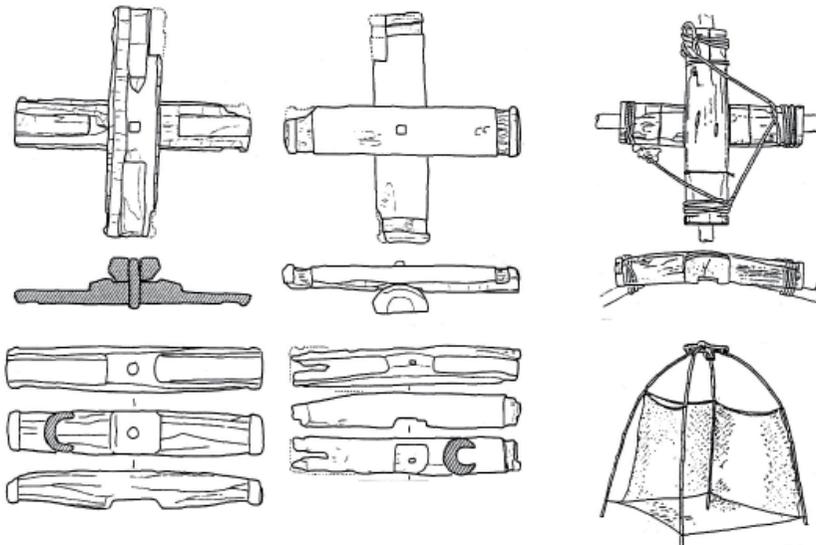


Figure 7 Part of a fishing-net frame of a so-called *yotsudeami* net found in the Tokai district (Kamino 1983).

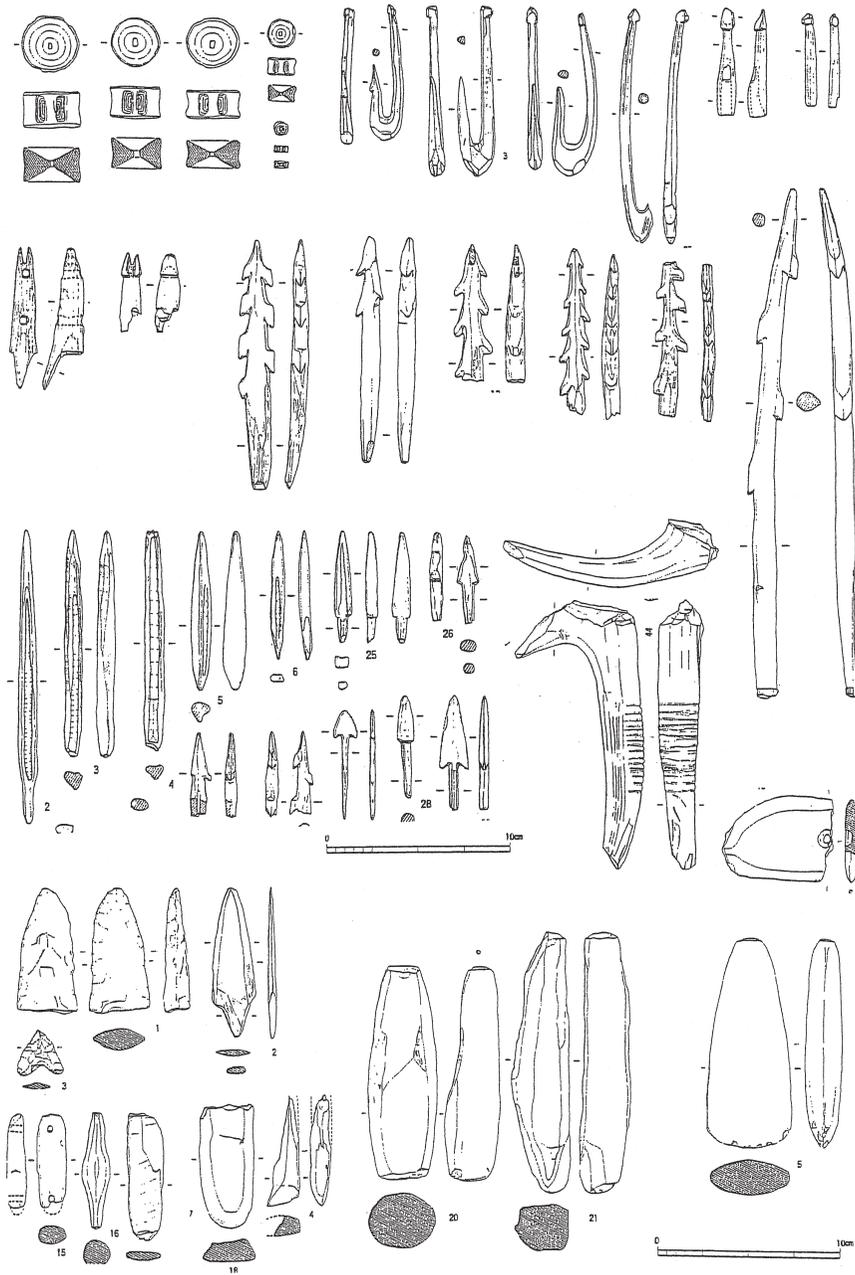


Figure 8 Archaeological materials found at Shirahama site (modified from Motoura Site Archaeological Research Group 1995).

includes monkeys, black bear, wild boar, deer, and Japanese serow (or goat-antelope), consistent with an interpretation of this site as a temporary hunting camp occupied by specialised hunters dispatched into the mountains as task groups from villages at the foot of the mountains. Of special interest is the abundance of faunal remains such as the bones of wild boar, black bear, Japanese serow, monkey, and deer, which indicate that the cave was a special temporary hunting site. The lack of deer antlers and shoulder blades from the Yukura assemblage confirms their export from the site and strengthens the case for a direct connection with sites such as Namani, described above.

RICE CULTIVATION AND OTHER SUBSISTENCE COMBINATIONS IN THE KANTO DISTRICT

Paddy-field rice cultivation was accepted later here than in either the Kinki or Tokai districts, with Yayoi people living not only close to the coast but also in the interior and the higher mountains. The first example of rice cultivation documented thus far in the region takes the form of rice grain impressions on the bottom of pots from the Arami shell mound, Chiba Prefecture, and dates to the end of the Jomon period. Recently discovered examples of carbonised rice grains found in a pit at Nakayashiki, Kanagawa Prefecture, date to the incipient Yayoi period. However, farmer settlements contemporary with these finds have not yet been found, possibly because a combination of climatic deterioration and marine regression led to a shift in settlement pattern at this time toward more lowland areas on the Kanto plain where sites are now deeply buried below ground. Once again, I frame my discussion in terms of the three ecological settings outlined above.

1) Coast

In this ecological zone, Yayoi villages were typically located with many house pits situated on the plateau or terrace looking downslope toward lower-lying areas where rice was cultivated in paddy fields. However, at the beginning of the Middle Yayoi period, large settlements enclosed by ditches appeared suddenly in the Kanto district. Otsuka in Kanagawa Prefecture, one of the largest of these settlements, contains several dozen house pits and is accompanied by a neighbouring cemetery site known as Saikachido. Evidence for rice grain cultivation at Otsuka takes the form of rice grain impressions on potsherds, while at the contemporary site of Ikego many wooden ploughs and hoes confirm that paddy-field rice cultivation was being practised on a large scale in the Kanto lowlands during Middle Yayoi times (Figure 9). Ikego is situated some 2 km from Sagami Bay and a varied ichthyofauna provides evidence of marine fishing in the form of bones attributable to Laminidae, Carcharhinidae and Istiophoridae, as well as to a range of more specifically identifiable taxa that includes *Squatina*, *Chondrichthyes*, *Lateolabrax*, *Pagrus major*, *Acanthopagrus* and *Katsuwonus pelamis* (Toizumi 1999). Bones and tusks of wild boar and bones and antlers of deer may derive from animals hunted near the paddy

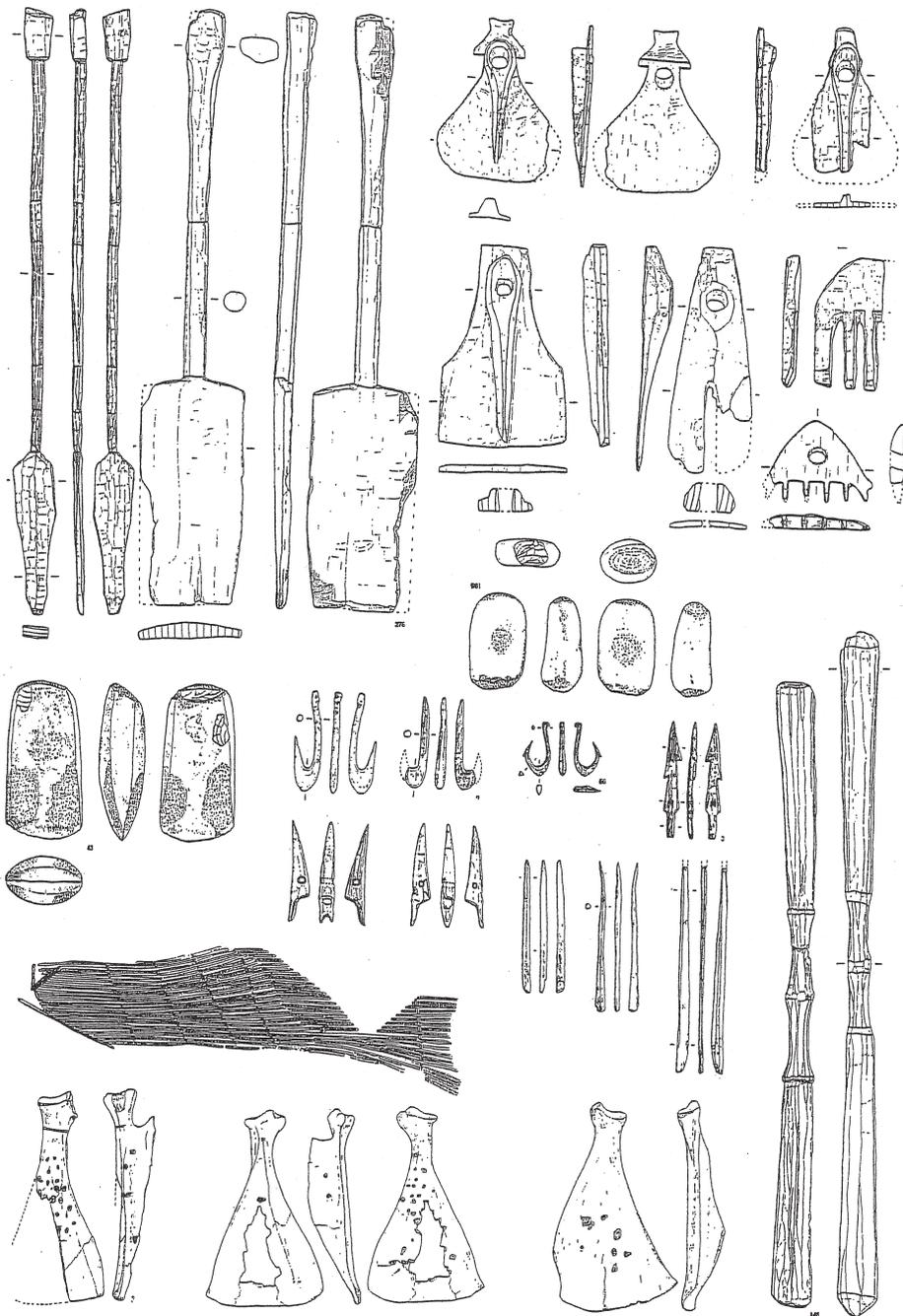


Figure 9 Archaeological materials found at Ikego site (modified from Kanagawa Archaeological Foundation 1999).

fields, rather than being the result of hunting forays deeper into the mountains. Alternatively, they may have been obtained via exchange with people living further inland. As elsewhere in Japan at this time, the shoulder blades of these wild animals show traces of cracks and heated holes indicative of their use in divination (Figure 9). Deer antlers were employed to make a range of artefacts, including toggle-line harpoons (Figure 9), but it is unclear whether these would have belonged to a specialised fishing community or to farmers who also practised marine fishing during the agricultural off-season. The former may be more likely as the fishing implements found at Ikego resemble those from Shirahama discussed above.

2) Interior

The Hara site located near Annaka City, Gunma Prefecture, provides another example of a mountain village. Excavations here have revealed the remains of 16 dwelling pits, likely to have been organised such that three or at most four houses stood there at any one time (Daikuhara 1999). The simplicity of the structures and the limited range of material culture found may imply a less than fully sedentary lifestyle, perhaps focused on slash-and-burn cultivation of crops such as barley, soy beans, millet, rice, buckwheat, and beans on the mountain slopes. Hunting is likely to have been practised higher into the mountains, offering the possibility of exchanging deer antlers and shoulder blades with coastal fisher-farmers. Inland, however, no evidence of fishing in paddy fields of Yayoi age has yet been obtained, although local ethnographic studies confirm its continued practice into the very recent past and its importance as a source of animal protein in rural diets (Yasumuro 1984). Local farmers are also reported to have manipulated the movements of freshwater fish by changing the location and position of fishing facilities according to changes in water flow during the annual agricultural cycle.

RICE CULTIVATION IN TOHOKU DISTRICT

Paddy-field rice cultivation gradually spread from northern Kyushu eastward as far as the Tohoku district, where paddy fields dating to 2,500 years ago have been found at the Sunazawa site). At Tomizawa in Sendai City, three phases of paddy field cultivation have been identified dating to Yayoi times. The oldest phase, likely to be of middle Yayoi age to judge from the presence of pottery of Masugatagakoi type, includes ridge and causeway development. Tareyanagi in Aomori Prefecture also has evidence of paddy-field cultivation at this time, while further paddy fields have been discovered at Sunazawa, also in Aomori Prefecture (Figure 10). There, the paddy field was divided by ridges and causeways into small divisions of about 50m². As this figure indicates, an important feature of this early paddy-field cultivation is the small scale on which it was practised. Perhaps consistent with this, no wooden ploughs or hoes have yet been discovered in the Tohoku district, even though they are relatively common at Yayoi sites in western Japan. This observation reinforces the likelihood that other subsistence activities are likely to have been needed;

numerous arrowheads attest that hunting and gathering activities, too, are likely to have been essential for people who may only have been part-time farmers. Fishing in paddy fields is not, however, evident.

Given the small scale of rice cultivation indicated thus far for the Yayoi period in Tohoku, it is difficult to establish why Jomon people living in this part of Japan

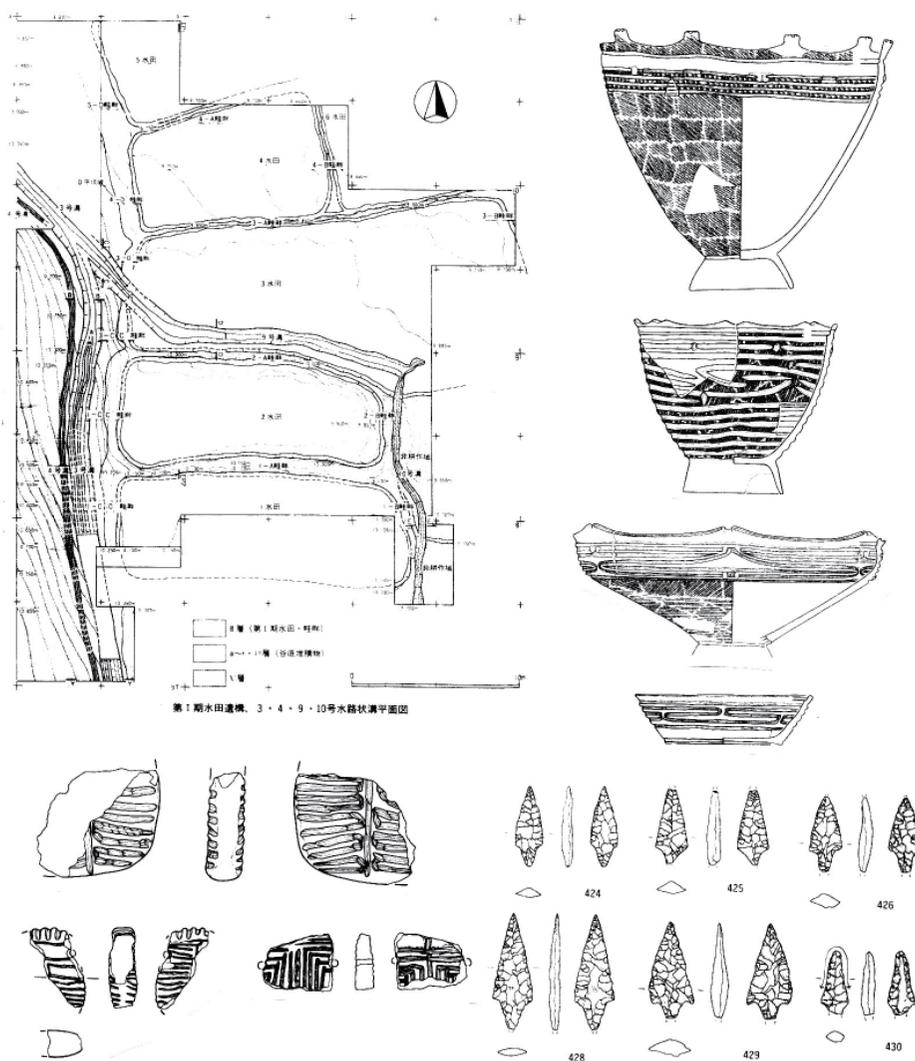


Figure 10 Traditional cultural elements of the Latest Jomon period found at an incipient agricultural site in the Tohoku district (Board of Education of Hirosaki City 1991).

began to engage in it, especially given a wealth of wild plant and animal resources, both terrestrial and aquatic. Reasons other than those relating directly to subsistence may have been involved, but it is clear that more traditional lifestyles persisted into the Yayoi period, along perhaps with other, ideological continuities, as suggested by the presence at Sunazawa of amulets of a kind otherwise known from Latest Jomon contexts.

DISCUSSION

The existence of subsistence specialisations and symbiotic relations between communities practising different subsistence strategies can be traced back as far as the transition from the Jomon to the Yayoi periods. A variety of subsistence activities can be discerned among sites of Yayoi date, including paddy-field rice cultivation, cultivation of millet and other crops, hunting, gathering, and fishing (both freshwater and marine). Yayoi people could choose to pursue different combinations of these basic activities according to the broad ecological setting of their settlement and more local micro-environmental factors. Some activities, such as catching freshwater fish in paddy fields and the artificial environments afforded by ditches and irrigation features near human settlements or hunting animals attracted to paddy fields, can certainly be identified from the archaeological data, but it is uncertain how large their contribution to the Yayoi diet really was. It seems likely, however, that they were of relatively minor importance compared to three other subsistence activities: rice cultivation, marine fishing, and mountain hunting. All three of these pursuits demanded specialised knowledge and techniques, including knowledge of appropriate rituals, whereas freshwater fishing and hunting close to human settlements were of a more passive nature and developed most strongly in coastal or coastal plain locations.

Close to the coast, although many communities may have depended heavily on paddy field rice cultivation, others may have specialised much more heavily in marine fishing. The Shirahama site provides evidence of this, although other sites, such as Asahi and Ikego, can be understood as the homes of both farmers and fishermen. Further inland, people living in villages at the foot of the mountains probably engaged in slash-and-burn agriculture on mountain slopes, combined in some cases with paddy-field rice cultivation in alluvial bottomlands and with hunting and gathering at higher elevations and deeper into the mountains. Represented archaeologically by temporarily occupied hunting camps such as the Yukura cave, the latter may have been a primarily autumn-to-spring (but especially winter) activity, with farming concentrated in the remainder of the year. This division of the year into two principal seasons, with cultivation confined to just one part of the year, may have facilitated the take-up of farming by Jomon hunter-gatherers.

HUNTER-GATHERER-FISHER SOCIAL STRUCTURE AND ITS RELEVANCE TO THE ACCEPTANCE OF RICE CULTIVATION

One of the main issues in Japanese prehistory is how to explain the transition from the Jomon hunting and gathering economy to the paddy-field agricultural system of the Yayoi period. Most Japanese archaeologists agree that the transition was gradual from an ecological point of view, in part because rice is too vulnerable to climate conditions, such as low summer temperatures and decrease in sunlight, to have spread rapidly over the colder parts of eastern Japan. A long time is likely to have been needed for the evolution of the necessary adaptations to permit successful rice cultivation in this region.

However, as well as such ecological considerations, social factors should not be neglected in explaining why paddy-field rice cultivation spread slowly in eastern Japan. Recent archaeological research has, in fact, revealed that Jomon societies were at least in part hierarchically structured, rather than organised on classic egalitarian lines, even though the nature of this hierarchy may have been significantly different from that characteristic of the Yayoi period. Such social complexity seems particularly likely to have existed among Jomon communities in eastern Japan, at least in part because two highly productive resources – acorns and salmon – abound there but are respectively less abundant or wholly lacking further west (Yamanouchi 1960). Jomon leaders may have kept their rank and position by manipulating symbolic objects and prestigious goods and by presiding over community rituals, ceremonies, and feasts, rather like Melanesian big men. Archaeological evidence consistent with this includes the appearance in the Kanto district of large dwelling-pit houses in the Late Jomon period, often found associated with zoomorphic clay figurines, stone rods, miniature pots, and other vessels resting on stands, all items that may have been used in ritual or ceremonial contexts. Such structures are now known from several sites, including Kasori, Miyauchi Idosaku, Gionbara, Nomankamiko, and Inonagawari, and at the Mino site the relevant structure appears to have been deliberately burnt partially, perhaps at the culmination of a particular ritual. In general terms, these structures are plausibly interpreted as men's houses or ritual centres, comparable perhaps to those found in the Sepik Valley of Papua New Guinea.

Other evidence for social complexity in later Jomon communities in eastern Japan takes the form of possible references to ancestor veneration. At Nakazuma, for example, remains of over 100 individuals were recovered from a small (2 m across, 1.5 m deep) pit of Late Jomon age. Mitochondrial DNA studies combined with a metric morphological analysis of deciduous teeth showed that the people represented in the sample were related to each other matrilineally (Shinoda *et al.* 1998). The large number of individuals found together and the formal nature of their disposal in themselves hint at the existence of some kind of corporate descent group, and ethnographic data suggest that such groups are often found where it is important to practise exclusive control over natural resources.

Worship and veneration of ancestors is characteristic of societies founded on unilineal descent. Penis-shaped stone rods, another Late Jomon artefact type, are likely to have connoted ideas about masculinity and their discovery in large numbers in pits at several sites (e.g. Shimofuda in Chofu City, Tokyo; Akagi in Saitama Prefecture; Tenjinmae in Gunma Prefecture) may indicate that they were used in such rituals for ancestors. Moreover, in the case of the Shimofuda site, several metres away from such a pit, supposedly a male individual had been buried in shallow pit surrounded by cobbles arranged to form a rectangular enclosure (Figure 11). Alongside him was a stone rod, a highly unusual example of a Jomon person being buried with precious artefacts that reinforces the case for Late Jomon communities having been transegalitarian in their social relations. The association with the stone rod may indicate that this individual was not only a person of high rank, but also someone intimately involved in the organisation of community rituals and the veneration of community ancestors.

If the model that I have outlined is correct, then such symbols, rituals, and feasts are likely to have been deeply connected to the Jomon way of life, and it is possible that the introduction of a new agricultural economy was perceived as a threat to the maintenance of leaders' social rank and authority. The two political systems – Jomon and Yayoi – were too different to assimilate into one system, suggesting that Jomon leaders may not have been willing to accept the transition until they found a compromise solution. In my opinion, this solution is likely to have taken the form of introducing paddy-field farming as one among the many existing diversified Jomon subsistence activities. Rice cultivation was thus taken up as part of a flexible broad-spectrum exploitation system that maintained fishing, hunting, and gathering and also permitted wild resources (both fish and mammals) to be taken when lured into paddy field systems. Moreover, far from initially having been a staple, rice may first have been introduced as a prestigious food, either for consumption by Jomon leaders and/or for consumption in rituals and feasts (cf. Hayden 1995). Whether consumed as steamed rice or in the form of rice wine, the possibility that it was also a special foodstuff dedicated to ancestors should also be considered.

Consideration of the Late and Latest Jomon developments in western Japan reinforces this model. There, in the period before rice cultivation was introduced, Jomon people appear to have carried out rituals and feasts, as indicated for example by the zoomorphic clay figurines and other ritual paraphernalia recovered at Kasihara, Nara Prefecture (Figure 12) and other sites in Kyushu (Matsumoto 2002). However, such feasting and rituals appear to have declined in western Japan after the second half of the Latest Jomon period when rice cultivation began in the Kyushu, Chugoku, Shikoku, and Kinki districts. At Nagahara, for example, only a small quantity of such finds (including clay figurines and stone rods) was recovered (Figure 13), and after declining further in number on incipient Yayoi sites such as Daikai (Figure 14) such evidence disappears completely by Middle Yayoi times. This decline may imply that a comparable decline took place in the power of Jomon

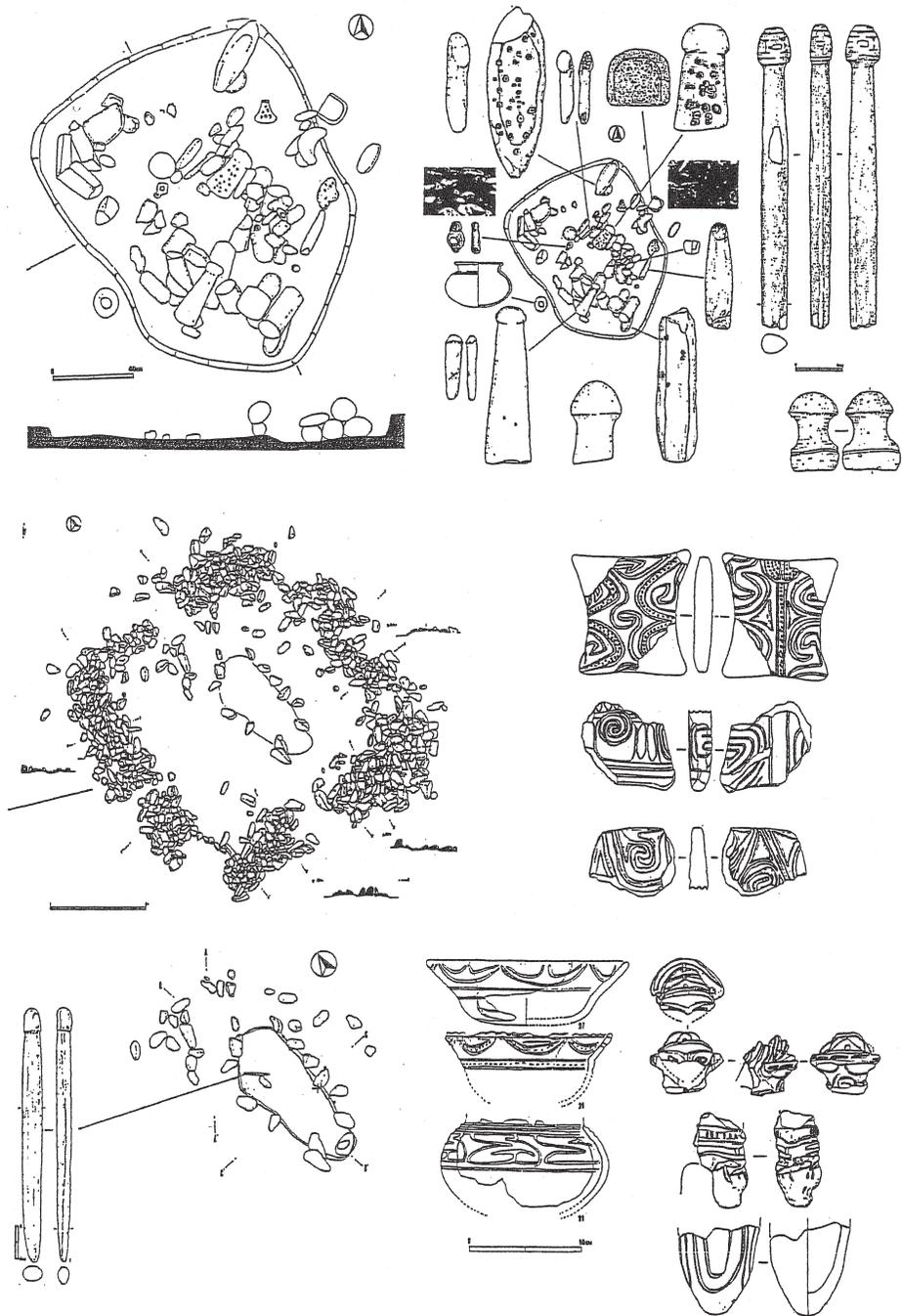


Figure 11 A pit filled with many Penis-shape stone rods, and specially constructed burial pit surrounded by cobbles, both from Shimofuda site.

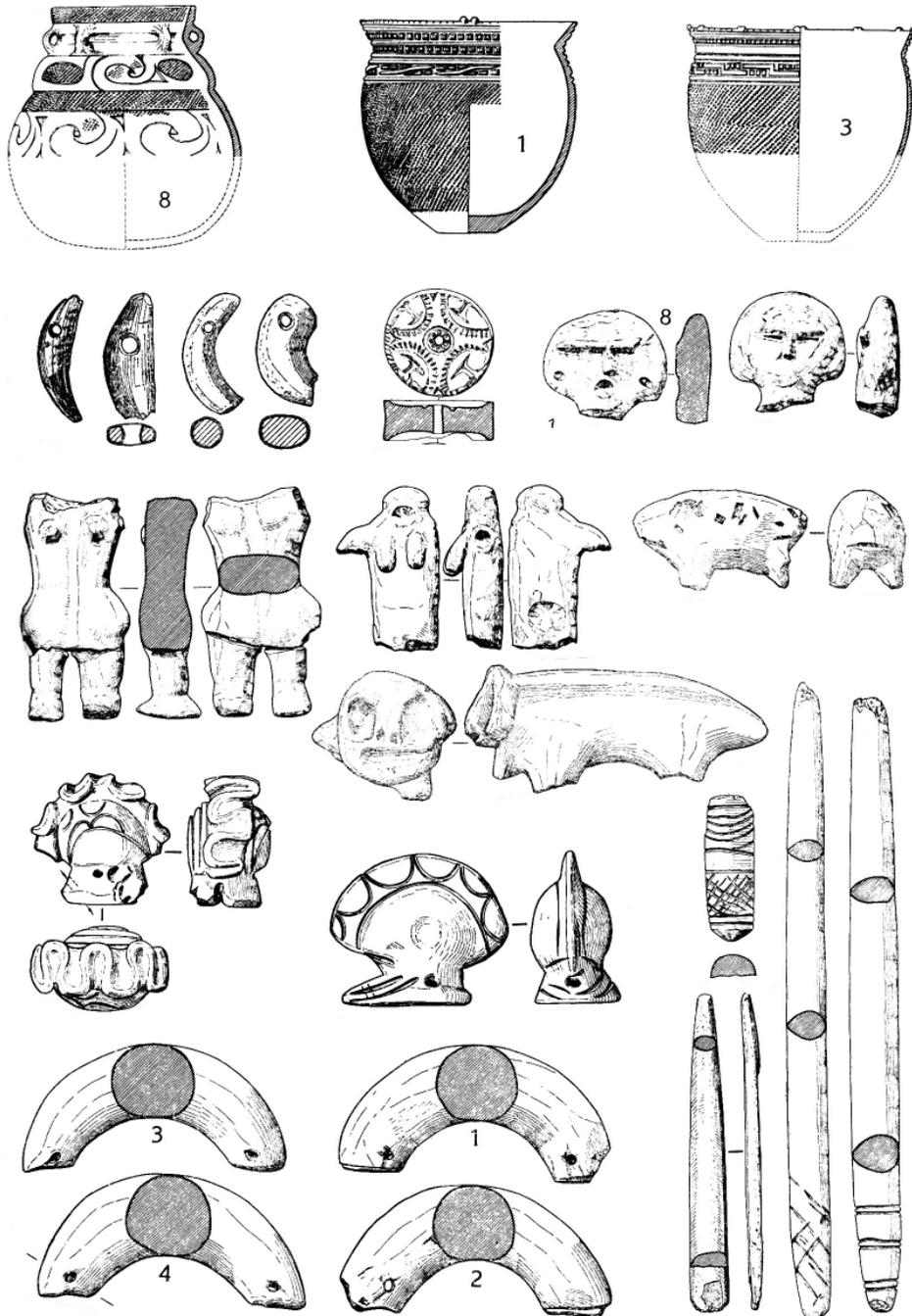


Figure 12 Ritual artefacts found at the Kashihara site in the Kinki district (modified from Board of Education of Nara Prefecture 1961).

leaders to manipulate feasts and rituals, as well as in the strength of Jomon ideology and its worship of ancestors. New rituals and new ideologies replaced them that, in turn, supported new (Yayoi) elites. In the northern part of the Tohoku district, on the other hand, people appear to have retained the older ideology and to have held rituals and feasts of Jomon type even after accepting rice cultivation. Large pit houses of Jomon type also continued in use, and here it seems likely that Yayoi-

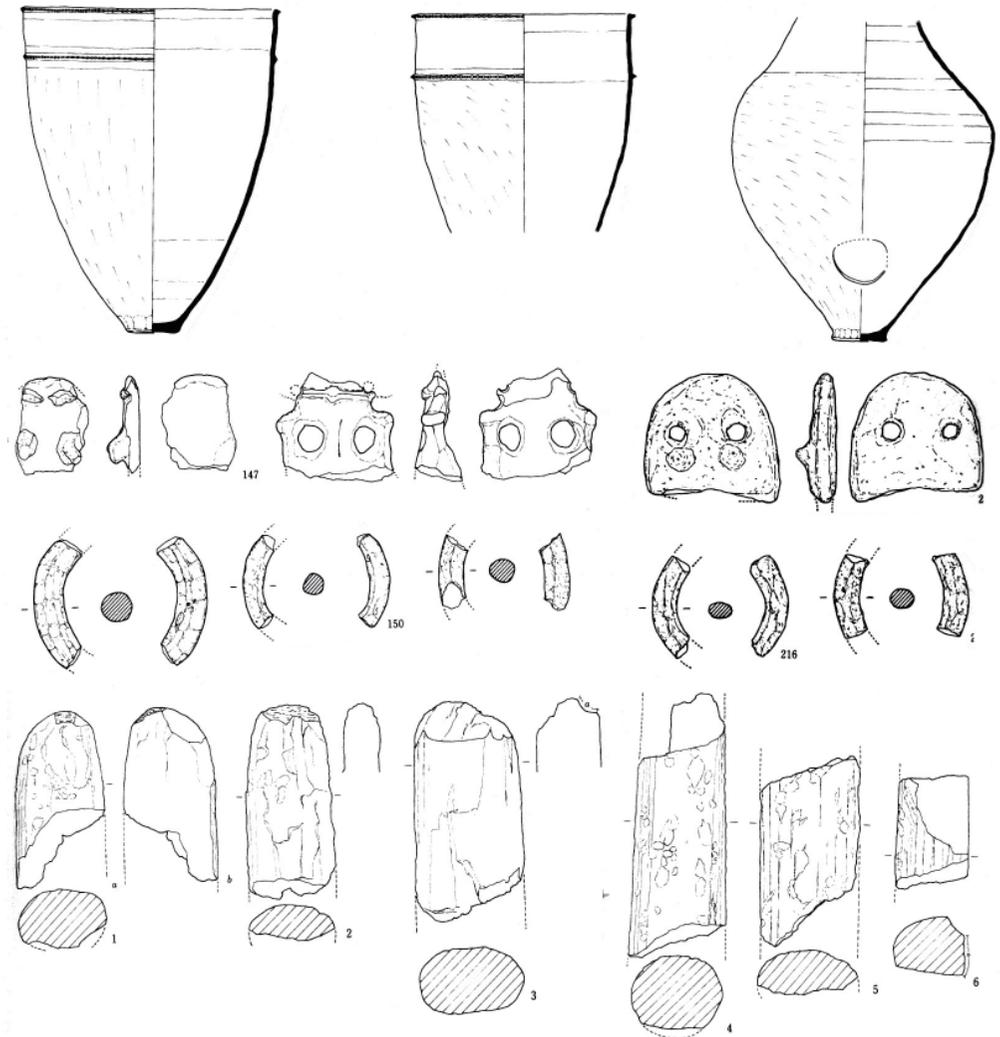


Figure 13 Degenerate clay figurines and stone rods for a ritual of the final Latest Jomon period, found in the Kinki district (modified from Osaka City Cultural Association 1983).

period leaders held power in ways similar to their Jomon-era predecessors (Figure 15).

The motivations for accepting rice cultivation and the social and economic effects of that acceptance thus varied significantly across Japan. The trans-galitarian leaders of the Latest Jomon period may have decided to accept rice cultivation as one among several subsistence activities, except where it was

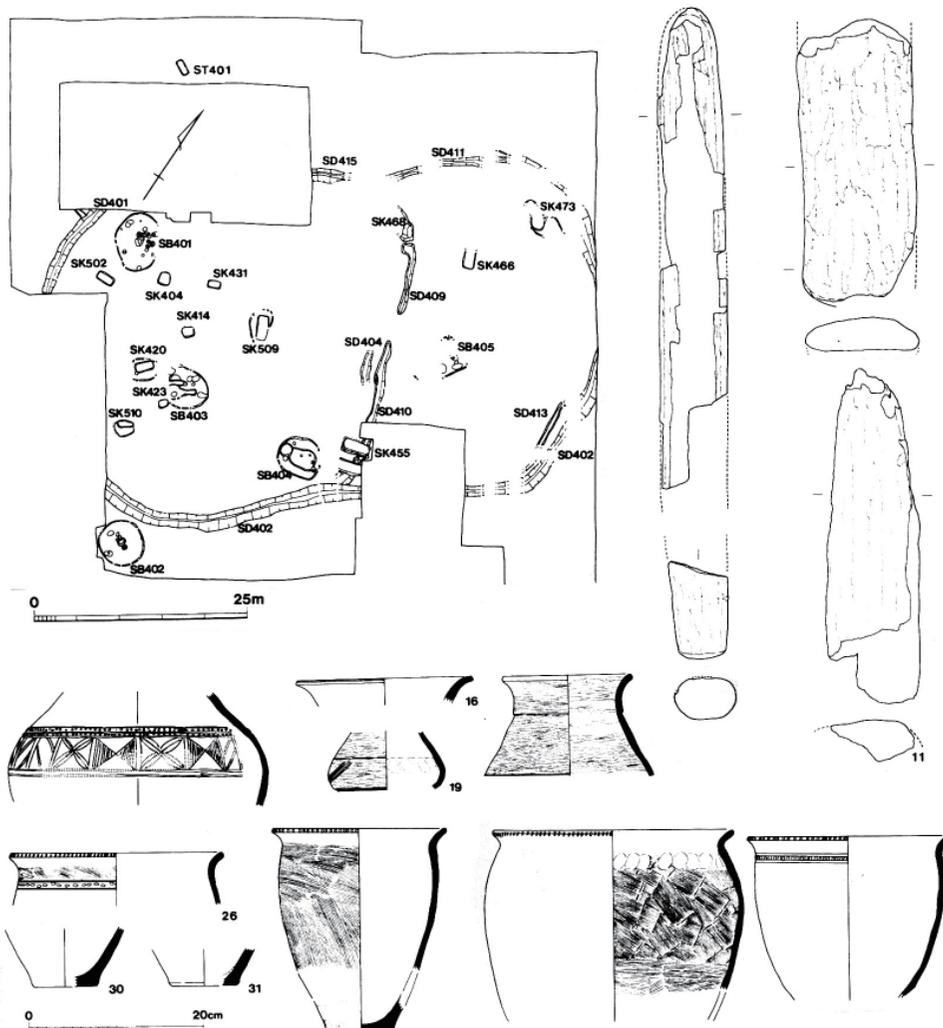


Figure 14 Degenerate stone rod of Jomon tradition in the incipient Yayoi age (modified from Board of Education of Kobe City 1993).

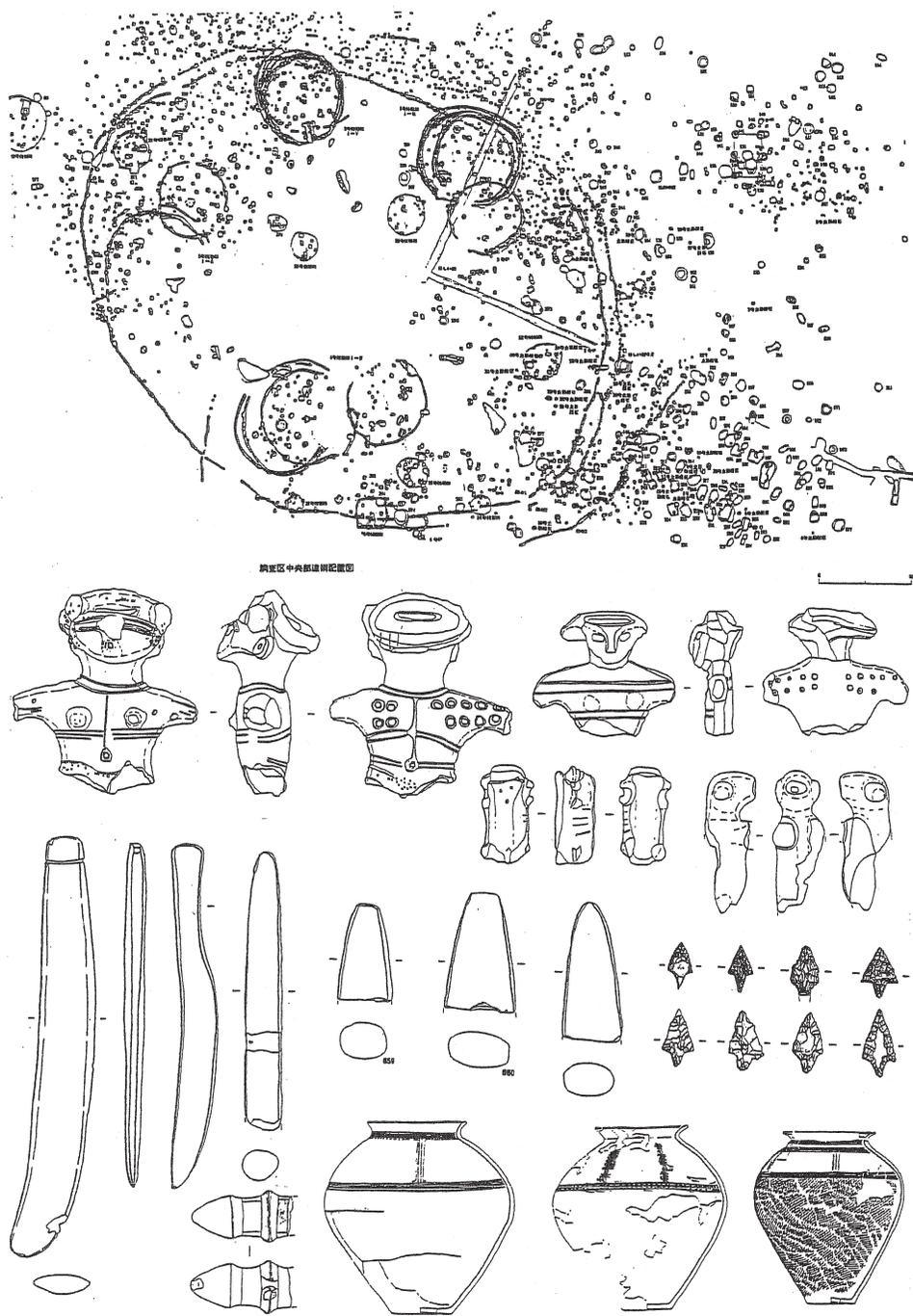


Figure 15 Incipient Yayoi period village and ritual objects found at Jizouden B site of Tohoku district (modified from Board of Education of Akita city 1986).

perceived as a great threat to their power and position. Rather than economic factors having been key to the acceptance and take-up of rice farming, rice may have been accepted for use in rituals and ancestor-related feasts controlled by, or at least manipulated by, Jomon leaders. Taking on rice therefore was, in the final analysis, a decision made for the leaders' own self-promotion in Jomon society. Moreover, since rice cultivation was an activity principally confined to just one half of the year, it could be accepted and combined in many ways with other subsistence activities, the precise nature of such combinations varying according to site location and ecological setting. One such variant is illustrated at Shirahama, where specialised fisherfolk appear to have exchanged fish for rice with people living further inland. Elsewhere, farmers and fishers may have lived in the same villages, with freshwater fishing and some hunting taking place in the man-made environment of the paddy fields; and some communities living at the foot of the mountains appear to have ventured deep into them on specialised hunting expeditions, mostly perhaps in winter and in part to procure deer antlers and shoulder blades that were then exchanged with more low-lying and coastal groups who used them as raw materials for fishing tackle and divination respectively.

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